

property is selected from the group consisting of substrate specificity, substrate binding, substrate cleavage pattern, temperature stability, pH dependence of enzymatic activity, pH dependence of stability, stability towards oxidation, Ca²⁺ dependency and specific activity;

- c) modifying the sequence of a nucleic acid encoding the parent alpha-amylase to produce a nucleic acid encoding a deletion, insertion, or substitution of one or more amino acids at a position corresponding to the at least one structural part or the at least one amino acid identified in said b); and
- d) expressing the modified nucleic acid in a host cell to produce the variant alpha-amylase.

--80. (New.) A method of producing a variant of a parent alpha-amylase; wherein the parent alpha-amylase has an amino acid sequence which is at least 70% homologous to SEQ ID NO:13 when homology is determined by the GAP program (Genetic Computer Group, Version 7.0) using default values for GAP penalties; the method comprising:

- a) providing a three-dimensional structure of an alpha-amylase which has an amino acid sequence which is at least 70% homologous to SEQ ID NO:13 when homology is determined by the GAP program (Genetic Computer Group, Version 7.0) using default values for GAP penalties; wherein the three-dimensional structure has atomic coordinates corresponding to the atomic coordinates for SEQ ID NO:13 depicted in Appendix 1;
- b) identifying in the three-dimensional structure at least one structural part or at least one amino acid wherein an alteration in the at least one structural part or the at least one amino acid is predicted to result in an altered property, wherein the altered property is selected from the group consisting of substrate specificity, substrate binding, substrate cleavage pattern, temperature stability, pH dependence of enzymatic activity, pH dependence of stability, stability towards oxidation, Ca²⁺ dependency and specific activity;
- c) translating the at least one structural part or the at least one amino acid identified in b) into the corresponding at least one structural part or at least one amino acid in the parent alpha-amylase;
- d) modifying the sequence of a nucleic acid encoding the parent-alpha amylase to produce a nucleic acid encoding a deletion, insertion, or substitution of one or more